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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/682,199
Filing Date: October 10, 2003
Appellant(s): HERMENTIN ET AL.

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For Appellant

RESPONSE TO REPLY BRIEF

This is in response to the Reply Brief filed January 17, 2008, replying to the Examiner's Answer mailed November 19, 2007.

(10) Response to Arguments

Appellants argue:

1. Shainoff does not suggest using regular agarose for resolving multimeric proteins because Shainoff used regular agarose either (1) as a control for comparison to the glyoxyl agarose gels which were the focus of Shainoff's article, or (2) to make a composite gel.
2. Shainoff *emphasizes* the advantages of glyoxal agarose in the first paragraph of the article, which evidences Shainoff's bias against regular agarose.
3. Shainoff *highlights* the comparatively broad immunostained bands in Figure 4 due to greater staining sensitivity and intensity relative to dye staining, which evidences Shainoff's bias against dye staining.
4. Bhat's & Nagineni's two-dimensional electrophoresis procedure requires two different gels and is not disclosed to be advantageous with one-dimensional electrophoresis.
5. Bhat & Nagineni used polyacrylamide gels, whereas the claimed invention requires agarose.
6. Perrella & Denisov do not teach or suggest the operating temperature range recited in dependent claim 25.
7. Perrella & Denisov teach away from the operating temperature range recited in dependent claim 25 because Perrella & Denisov describe buffer compositions that do not freeze at cryogenic temperatures.

Appellants' arguments have been carefully considered but are not persuasive.

With respect to 1), Examiner acknowledges that Shainoff used regular agarose for comparison to glyoxyl agarose gels. Thus, Shainoff explicitly teaches using regular agarose for resolving multimeric proteins (see *e.g.*, p. 66, Section *1.1 Development of glyoxyl agarose and composites*, first paragraph,

first sentence, "fibrinogen derivatives"; see *also*, p. 78, Section *2.1.1.1 Gel concentrations*, first paragraph, line 5, "separating von Willebrand factor multimers").

With respect to 2) and 3), Shainoff "emphasizes" or "highlights" several viable alternatives used in electrophoresis procedures, including the use of glyoxal agarose and immunostaining. This is not tantamount to Shainoff sharing Appellants' bias against dye labels and continuous agarose gels (see Appeal Brief, p. 10, second full paragraph to p. 11, first full paragraph; see *also*, p. 12, first full paragraph). Appellant has not indicated as to how/why dye labels and continuous agarose gels might be inferior and/or inoperative.

With respect to 4) and 5), Bhat & Nagineni used their "submarine" apparatus for one-dimensional electrophoresis in agarose (see Abstract, first sentence). Persons of ordinary skill would find it obvious to replace Shainoff's electrophoretic protocol with Bhat's & Nagineni's "submarine" method because Bhat's & Nagineni's "submarine" method allows for stacking of multiple gels for multiple simultaneous runs (see Abstract).

With respect to 6), Examiner acknowledges that Perrella & Denisov do not explicitly teach the operating temperature range recited in dependent claim 25. However, Perrella & Denisov demonstrated the ability of lower temperatures to capture "intermediate stages of ligation" and "quaternary structural changes" of a multimeric protein, which has particular relevance to Shainoff's electrophoretic separation of multimeric von Willebrand factor and fibrinogen. Thus, the operating temperature range recited in dependent claim 25 may be considered obvious in view of Perrella's & Denisov's teachings, and in view of the U.S. Court of Customs and Patent Appeals' decision that discoveries of optimum or workable temperature ranges are not patentable when the prior art discloses general conditions (*e.g.*, temperature dependence) of a claim. See *In re Aller,* 105 USPQ 233 (CCPA 1955).

With respect to 7), Examiner acknowledges that Perrella & Denisov describe buffer compositions that do not freeze at cryogenic temperatures. Appellant does not address how this precludes, or teaches away from, using these buffer compositions in the operating temperature range recited in dependent claim 25, or in the methods of Shainoff and Bhat & Nagineni.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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